



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

pair of sharp eyes; also the following books: Lesquereux and James' "Manual of the Mosses of North America," price \$4.00; and "Analytic Keys to the Genera and Species of North American Mosses," by Prof. C. R. Barnes and Fred D. Heald, price \$1.00. Jameson and Dixon's "Handbook of British Mosses," costing about \$5.75, will be very useful.

Do not be appalled by the above list as it will be possible to learn many of the common mosses with the BULLETIN, hand-lens and the sharp eyes, and if driven to it one can do very well with the eyes and the BULLETIN alone. The editor knows twenty-five or more species of New England mosses that he can recognize without the aid of any lens, and nearly all of these possess characters sufficient to enable others to recognize them from a careful description accompanied by a simple illustration.

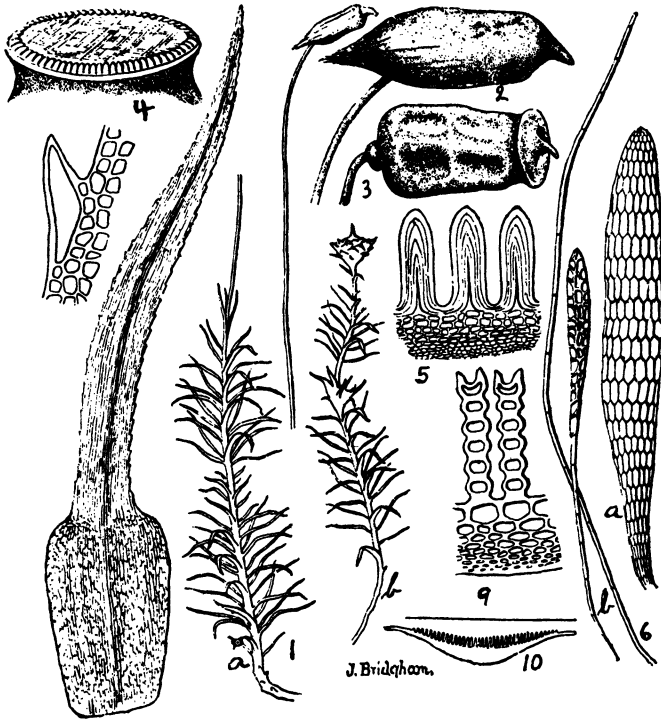
THE HAIR-CAP MOSSES.

THE Common Hair-cap moss (*Polytrichum commune* L.), is the most common and easily recognized of the group. The Latin and English names of this moss are both unusually appropriate. So common is it that scarcely any roadside or meadow is free from it. In many portions of New England it is a great nuisance in old meadows, entirely killing out the grass and covering the ground with a dark green mat of its closely growing upright stems.

From the figure of the fruiting plant it will be seen that it belongs to the acrocarpus division of the mosses, which have their fruit borne on the ends of the main stem. The plant with fruit grows from two to six inches in height. The base of the stem is fixed in the earth by a tangle of thread-like rhizoids which answer the purpose of roots and root hairs. Above are the leaves arranged in ranks, and from the top of the stem springs the long slender seta, bearing at the summit the square capsule or spore case. In the freshly matured plant the capsule is covered with a hairy cap (*calyptra*), whence the name Hair-cap Moss.

The seta and capsule of the moss correspond to what is commonly called a fern, while the rest of the plant corresponds to the prothallium, and if the base of the seta be carefully examined it will be found to be swollen and covered with little flask shaped bodies, the archegonia.

The fruit of the moss has developed from just such a body which was fertilized by an antherozoid, produced in the anthe-



POLYTRICHUM COMMUNE L.

- 1.—Male and female plants, about one-half natural size. 2 and 3.—Capsules with and without calyptra. 4.—Mouth of capsule, enlarged. 5.—Teeth of peristome, greatly enlarged. 6.—Antheridium and paraphyses, greatly enlarged. 7.—Leaf, enlarged. 8.—Margin of leaf enlarged to show tooth and cells. 10.—Cross-section of leaf to show lamellæ on upper surface. 9.—Lamellæ, greatly enlarged.

Taken by permission from Mrs. E. G. Britton's "Mosses of the Eastern United States." (in preparation).

ridium (fig. 6). The antheridia are borne on separate plants in terminal rosettes (fig 1). Both antheridia and archegonia grow intermingled with slender hairs called paraphyses (fig 6).

Returning to the capsule we shall find, if our plant is mature, that at the top of the capsule there is a lid or operculum (fig 3), which can be pulled off and which lets the spores escape. A strong dissecting microscope will be needed to see the antheridia and

archegonia and a compound microscope will be necessary to make out most of the following points:

If after removing the operculum we examine the mouth of the capsule under a low power we shall find it to be surrounded by a row of 64 teeth; this row of teeth is called the peristome. The points of the teeth are lightly attached to a membrane stretched across the mouth of the spore case. Under the compound microscope the leaves appear lanceolate and sharply serrate with a clasping base made up of large, nearly colorless cells, while the upper part of the leaf is much more dense, and is deep green. The midrib or costa is very broad and consists of several layers of cells while the margin consists of a single layer. In order to increase the light-receiving area this plant has adopted the curious contrivance of sending out from the upper surface of the costa radiating layers, lamellae, a single cell thick. These are shown in a cross section of the leaf at fig. 10. The upper cell in this species is concave on its upper edge, as is shown in the greatly magnified lamellæ at fig. 9.

There are six species of *Polytrichum* which occur in New England. The most common species next to *P. commune* is *P. piliferum* Schreb., Awned Hair-cap Moss, which grows in dry situations around ledges and gravelly places. It is much smaller and is readily determined by the long slender awns at the apex of the leaves. I have collected this on the very brow of The Profile, Franconia Mountains. *P. juniperinum* Willd, Juniper-like Hair-cap Moss is also common in woods or peat bogs and is easily distinguished by its lighter color and the incurved margins of the leaves. If you climb any of the higher mountains you are sure in moist places to find *P. strictum* Banks, the Erect Hair-cap Moss. This is distinguished from all our other species by the dense felt of radicles which sometimes covers nearly the entire plant, and from *P. juniperinum*, of which it was formerly reckoned a variety, by the erect appressed leaves and cubical capsules. The three species last named have entire leaves. The only other species likely to be met with is *P. Ohioense*, Ren. and Card., Ohio Hair-cap Moss. This has serrate leaves and is not always readily distinguished from *P. commune* by an inexperienced observer. *P. commune* has the capsule cubical and entirely covered by the calyptra, while in *P. Ohioense* the capsule tapers into the seta and is not quite covered by the calyptra.

While the limited supply lasts specimens of *P. commune*, *P. strictum*, *P. juniperinum* and *P. piliferum* will be sent to any subscriber upon receipt of ten cents in stamps.